

REMARKS

This application is amended in a manner to place it in condition for allowance at the time of the next Official Action.

Status of the Claims

The non-elected claims 24-40 and 47-49 have been canceled without prejudice, as applicants reserve the right to file one or more divisional applications directed to the non-elected subject matter.

Claim 41 has been amended to clarify the process of claim 24 by including the features of claim 24 and the further feature of claim 34, and claim 41 includes the features previously recited in claim 43.

Accordingly, claim 43 is cancelled. Claim 42 is also cancelled without prejudice.

Claims 43-46 are amended as to form.

Claims 50-65 are new. Claims 50-57 include features of original claims 25-32, respectively, and claims 58-63 include features from original claims 34-39, respectively. Claims 64 and 65 include the features cancelled from claim 45.

Claims 41, 43-46 and 50-65 remain in this application.

Claim Rejections-35 USC §102

Claims 41 and 42 were rejected under 35 U.S.C. §102(b) as being anticipated by DAI et al. "DAI". Claim 41 was

rejected under 35 U.S.C. §102(b) as being anticipated by WANG et al. "WANG". These rejections are respectfully traversed for the reasons below.

DAI discloses the preparation of silica aerogel using an ionic liquid as the solvent. In this process, TMOS, formic acid and the ionic liquid were mixed, and the final mixture was gelled overnight being cured at ambient temperature for 3 weeks. The entrapped ionic liquid was then extracted by refluxing in acetonitrile. IR measurements clearly show that all ionic liquid molecules were removed through extraction (See page 243. left column, first and second paragraphs).

However, even if the intermediary product obtained after sol-aggregation and illustrated in scheme I of DAI appears to approach the ionogel of the claimed invention, DAI fails to disclose the properties of this intermediary product. Indeed in DAI, ionic liquids contained in this intermediary product are always extracted because they are only used as templates for synthesis of silica aerogels.

WANG teaches a method of synthesizing an ionic liquid polymer gel containing MPII and PVDF-HFP and its use as quasi-solid-state electrolyte in dye-sensitized nanocrystalline TiO₂ solar cells. WANG does not disclose stable inorganic matrix.

Thus, the amended and new claims are not anticipated by DAI, nor by WANG.

DAI and WANG also fail to render obvious the claimed invention.

The inventors of the present application were the first to isolate the oxide matrix issued from a sol-gel process which contains the ionic liquid. At the time the invention was made, one of ordinary skill in the art, like DAI, considered that ionic liquids were only solvents, usable as intermediary mediums for sol-gel synthesis. However, the inventors were the first to identify the physical properties of the oxide-matrix containing ionic liquids and to propose possible applications.

In view of DAI, there was no incitation for one of ordinary skill in the art who wishes to develop new high-performance solid electrolytes to stop the reaction before the solvent extraction and to isolate an oxide-matrix containing ionic liquids.

As shown in the results disclosed in the present application, the claimed ionogels present both the mechanical and transparency properties of silica gels (results of mechanical tests page 14 of the English translation lines 10 to 14, "*These values are of the order of those commonly obtained for the aerogels already described in the literature with a density of approximately 0.3. The aerogels described in the literature are gels which are dried under hypercritical conditions. These values therefore correspond to materials which are fragile, but non-friable and handleable*") and the high ionic conductivity of

ionic liquids (see the results of conductivities page 15, lines 9-11, *"These conductivity values classify ionogels among the best solid ionic conductors known to date, and particularly classify them as those having the best ionic conductivity temperature resistance combination"*)

Therefore, withdrawal of the rejection is respectfully requested.

Claim Rejections-35 USC §112

Claim 42 was rejected under 35 U.S.C. §112, second paragraph, for being indefinite. This rejection is rendered moot by the present amendment which cancelled claim 42.

Claim Objections

Claims 43-46 were objected to for being dependent upon a rejected base claim. As claim 41 now includes the features of claim 43, and the process of claim 24 with process feature 34, Claim 41 is believed to be in condition for allowance.

Therefore, withdrawal of the objection is respectfully requested.

Conclusion

In view of the amendment to the claims and the foregoing remarks, this application is in condition for allowance

at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our credit card which is being paid online simultaneously herewith for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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